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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/978,063	10/17/2001	Kazuhisa Kashiwazaki	0234-0433P	4184

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EXAMINER

COMBS, JANELL A

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 07/08/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/978,063

Applicant(s)

KASHIWAZAKI ET AL.

Examiner

Janelle Combs-Morillo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-7 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/462,744.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Interpretation

1. The examiner points out that instant specification teaches that the annealing step (mentioned without a temperature range in independent claims 3 and 9), typically takes place at temperatures “up to 530°C” (instant specification p 13 line 21), and the examples in the specification teach that said annealing takes place at 530°C (p 15 line 14, p 24 line 4). The examiner points out that the instant annealing step is equivalent to the prior art’s solution heat treating step (see “Aluminum and Aluminum Alloys” pp 290-297, 319). In particular, see Fig. 1 on page 290, and p. 319 under the heading “Annealing” of “Aluminum and Aluminum Alloys”, clearly temperatures ~530°C are >> than typical “*annealing*” temperature ranges for aluminum alloys, and this temperature range is more consistent with “*solution heat treatment*” (“Aluminum and Aluminum Alloys” pp 290 Fig. 1).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-110232 optionally in view of JP’054.

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JP 10-110232 teaches an aluminum alloy of composition comprising (in weight%): 0.2-3% Si and 0.2-3% Mg, one or more of: 0.01-0.5% Mn, 0.01-0.5% Cr, 0.01-0.5% Zr, 0.001-0.5% Ti, and one or more of: 0-2.5% Cu and 0-2% Zn, and up to 1% Fe, which overlaps the composition as presently claimed (see abstract, etc.).

Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2112.01, *In re Best* 195 USPQ 430, *In re Malagari*, 182 USPQ 549, *In re Titanium Metals Corporation of America v. Banner*, 227 USPQ 773 (Fed. Cir 1985), *In re Woodruff*, 16 USPQ 2d 1934, and *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

Concerning claim 3, JP'232 teaches a process comprising melting, casting, homogenizing, cold rolling (see [0008], [0010]), solution heat treating, and cooling at a rate of $>2^{\circ}\text{C/s}$ after solution heat treating (see [0018]). As stated above, it appears that the presently claimed "annealing" step is equivalent to the "solution treatment" step in the prior art (see Claim Interpretation section for details). JP'232 does not teach reducing by both hot and cold rolling. However, with regard to the process steps, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See *In re Brown* (173 USPQ 685) and *In re Fessman* (180 USPQ 524).

Because applicant has not shown that the alloy product taught by JP'232 is materially different from the instant product by process, it is held that JP'232 has created a prima facie case of obviousness of the presently claimed invention.

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Alternatively, JP'232 does teach that it is known in the art to form sheet products from ingot starting materials (instead of direct casting rolling thin sheets), followed by homogenizing, hot rolling, cold rolling, and solution heat treatment see [0003]. Likewise, JP'054 (who teaches the production of an Al-Si-Mg-Zn-Cu-Fe alloy sheet with a substantially similar alloy composition as presently claimed) teaches a process of obtaining an aluminum sheet by homogenizing, hot rolling, cold rolling $\geq 50\%$, and solution heat treating (see abstract, etc.). It would have been obvious to one of ordinary skill in the art to use the alloy taught by JP'232 in an ingot reduction practice (as taught by JP'054) including hot rolling and cold rolling at a high reduction ratio, followed by solution heat treating and cooling at a rate $\geq 2^\circ\text{C/s}$ (as taught by JP'232), because JP'054 teaches a high strength corrosion resistant sheet can be accomplished by said high reduction hot and cold rolling process, and JP'232 teaches that said cooling rate is important in order to obtain a product with supersaturated intermetallic phases [0017].

Concerning dependent claims 4-7, JP'232 does not teach examples within the instant composition and with the presently claimed properties (bending property, impact energy, TS, YS, elongation). However, the examiner points out that JP'232 shows TS, YS, and elongation values in Table 3 that fall within the presently claimed TS, YS, and elongation values for similar Al alloys. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Because the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (such as bending property,

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impact energy, TS, YS, elongation) are expected to be present. It is held that JP'232 has created a prima facie case of obviousness of the presently claimed invention.

4. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'232 in view of JP'054 and Komatsubara et al.

As stated above, JP'232 teaches a process comprising melting, casting, homogenizing, cold rolling $\geq 70\%$ (see [0008], [0010]), solution heat treating, and cooling at a rate of $>2^\circ\text{C/s}$ after solution heat treating (see [0018]). As stated above, it appears that the presently claimed "annealing" step is equivalent to the "solution treatment" step in the prior art (see Claim Interpretation section for details). JP'232 does not teach reducing by both hot and cold rolling, or a reduction of $\geq 98\%$.

JP'232 does teach that it is known in the art to form sheet products from ingot starting materials (instead of direct casting rolling thin sheets), followed by homogenizing, hot rolling, cold rolling, and solution heat treatment see [0003]. Likewise, JP'054 (who teaches the production of an Al-Si-Mg-Zn-Cu-Fe alloy sheet with a substantially similar alloy composition as presently claimed) teaches a process of obtaining an aluminum sheet by homogenizing, hot rolling, cold rolling $\geq 50\%$, and solution heat treating (see abstract, etc.). Sheet products obtained by the above mentioned ingot practice *can* undergo more reduction because the starting thickness is typically greater than sheets obtained by direct casting rolling (the examiner points out that (a) both methods are well known in the art, and (b) the alloy taught by JP'232, which overlaps the presently claimed alloying ranges, is clearly capable of being processed either way). It would have been obvious to one of ordinary skill in the art to use the alloy taught by JP'232 in an ingot reduction practice (as taught by JP'054) including hot rolling and cold rolling at a high reduction

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ratio, followed by solution heat treating and cooling at a rate $\geq 2^{\circ}\text{C/s}$ (as taught by JP'232), because JP'054 teaches a high strength corrosion resistant sheet can be accomplished by said high reduction hot and cold rolling process, and JP'232 teaches that said cooling rate is important in order to obtain a product with supersaturated intermetallic phases [0017].

Concerning dependent claim 2, neither JP'232 nor JP'054 teach the use of recycled aluminum scrap. However, Komatsubara et al teaches that it is conventional in the art to produce similar Al-Si-Mg sheets from scrap material (column 8 lines 33-38). It would have been obvious to one of ordinary skill in the art to combine the teachings of JP'232, JP'054, and Komatsubara et al, that is, to make Al-Si-Mg sheets by the process and composition taught by JP'232 and JP'054 with recycled scrap, as taught by Komatsubara et al, because Komatsubara et al teaches it is common to make Al-Si-Mg alloy sheets out of recycled scrap (column 8 lines 33-38).

Response to Amendment/Arguments

5. In the response filed on April 21, 2003, applicant amended claims 2-7, canceled claims 1 and 8, and added new claim 9. The terminal disclaimer filed on March 19, 2003, concerning US Pat. 6,325,870 has been found proper. The double patenting rejection with regard to US Pat. 6,325,870 has been overcome.

Applicant's argument that the instant Al-Si alloy product is allowable over JP'054 has been found persuasive (see arguments page 7, etc.).

The argument that the instant invention is allowable over JP'095 because the cooling rate after annealing taught by JP'095, 100°C/hr , results in a product that is materially different than

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the presently claimed product, and that the presently claimed product by process exhibits unexpected results over the product taught by JP'095 has been found persuasive.

Applicant's argument that the present invention is allowable over the prior art of record because JP'232 does not teach the instant percent reduction (arguments page 11) has not been found persuasive. Concerning the instant product claims, applicant has not shown that the product taught by JP'232 is materially different than the presently claimed product by process. Concerning the instant process claims, as stated above, the combination of JP'232 and JP'054 teach an alloy processed substantially as presently claimed.

Applicant's argument that the present invention is allowable over the prior art of record because JP'232 does not provide motivation to select the exact elements of the instant invention has not been found persuasive. JP'232 broadly overlaps the presently claimed alloying elements and ranges, and applicant has not shown unexpected results (or a synergistic effect, etc.) occurs for the instant aluminum alloy, with regard to the prior art of JP'232.

The examiner points out that in order to establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 197 (CCPA 1960).


Conclusion


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (703) 308-4757. The examiner can normally be reached on 7:30 am- 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7719 for regular communications and (703) 305-7719 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


GEORGE WYSZOMIERSKI
PRIMARY EXAMINER


jcm
June 30, 2003